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| 10/559,749 | 01/19/2006 | Ingrid Bach | 09931-00051-US | 5947 |

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| EXAMINER |
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KOSACK, JOSEPH R

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| ART UNIT | PAPER NUMBER |
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1626

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08/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/559,749

Applicant(s)

BACH ET AL.

Examiner

Joseph R. Kosack

Art Unit

1626

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,6,8-13,16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3,6,8-13,16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 3, 6, 8-13, 16, and 17 are pending in the instant application.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 19, 2009 has been entered.

Previously Claim Rejections - 35 USC § 112

Claims 3-16 were previously rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Applicant has traversed the rejection on the grounds that the structures in base claim 3 relate to the same general ligand system and that the compounds would have a similar chemical reactivity and can all be synthesized by the method of claim 3.

The Examiner respectfully disagrees. The ligand systems are *not* all similar. Firstly, even though the CyD1, CyD2, and CyD3 groups now require that they are nitrogenous rings with the D1, D2, or D3 atom being nitrogen coordinated to the metal, the CyC1, CyC2, and CyC3 can be any aromatic cyclic group, which includes various carbocyclic aromatic groups and heteroaromatic cyclic groups. The guidance within the specification only points to adequately describing the reaction where CyC1, CyC2, or

CyC3 are drawn to a phenyl ring. Additionally, there is no guidance as to how to incorporate the X ligands which are found in formulae 3, 4, 5a, 5b, and 6 in claim 3.

The rejection is maintained, except for those claims cancelled by the Applicant.

Claims 3-16 were previously rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for reactions involving 2-phenylpyridine and iridium, does not reasonably provide enablement for any other ligand/metal combination.

Applicant has traversed the rejection on the same grounds as above, and the Examiner disagrees for the same reasons as stated above. The rejection is maintained, except for those claims cancelled by the Applicant.

Previous Claim Rejections - 35 USC § 102

Claims 1-8 and 10-14 were previously rejected under 35 U.S.C. 102(b) as anticipated by Konno et al. (*Chemistry Letters*, 2003, 252-253, Released February 12, 2003).

As stated previously in the Advisory Action of May 1, 2009, the Applicant has deleted the anticipated subject matter, and the rejection is withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3, 6, 8-13, 16, and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains

subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In the instant case, a process for forming carbon-metal bonds by ortho-metalation is claimed using one or more organic compounds with a C-H bond and at least one metal. The specification only details one example using 2-phenylpyridine and $\text{Na}[\text{IrCl}_2(\text{acac})_2]$. While working examples are not required, they can be extremely helpful in the chemical arts where an extremely broad genus is claimed. It is well known in the art that a process that works for one metal and one ligand system may not work for another metal or another ligand system unless that the ligands or metals are related chemically. Additionally, there is no disclosure as to how the X ligands in formulae 3, 4, 5a, 5b, and 6 can be incorporated by the instantly claimed method. Therefore, a person of skill in the art would expect to see a number of examples covering the vast scope claimed in order to conclude that the Applicant was in possession of the claimed invention at the time of filing. Hence, the claims do not meet the written description provision of 35 U.S.C. 112, first paragraph.

Claims 3, 6, 8-13, 16, and 17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for reactions involving 2-phenylpyridine and iridium, does not reasonably provide enablement for any other ligand/metal combination. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

The nature of the invention is a process for forming carbon-metal bonds by ortho-metalation is claimed using one or more organic compounds with a C-H bond and at least one metal. The organic compound can be any compound with a C-H bond in the CyC1, CyC2, or CyC3 groups and a ring with a nitrogen donor atom for CyD1, CyD2, or CyD3, and the metal can be iridium or platinum. The state of the inorganic chemistry art is that a process that works for one metal and one ligand system may not work for another metal or another ligand system. The only example that is provided is that of a reaction involving 2-phenylpyridine and $\text{Na}[\text{IrCl}_2(\text{acac})_2]$. While this can be extrapolated to include complexes of platinum, as stated above in the arguments, it cannot be extrapolated to include any aromatic group for CyC1, CyC2, or CyC3 and does not show how to incorporate the X ligands for formulae 3, 4, 5a, 5b, and 6. Therefore, in view of the evidence found, one of skill in the art would require undue experimentation in order to practice the invention to the full scope claimed.

Conclusion

Claims 3, 6, 8-13, 16, and 17 are rejected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Kosack whose telephone number is (571)272-5575. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph R Kosack/
Examiner, Art Unit 1626